

**WHAT IS CLAIMED IS:**

1. A method comprising:

an I/O device of a system receiving a multimedia stream as input, the I/O device having a I/O clock and the system having a system clock; and synchronizing samples of the stream with the system clock.
2. The method of claim 1, wherein the synchronizing includes generating a timestamp of a sample of the multimedia stream with a corresponding time of the system clock; and generating a timing model parameter for the I/O device with the timestamp.
3. The method of claim 3, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $t(\tau_i) = a_i(t) \tau_i + b_i(t)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.
4. The method of claim 2, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $\tau_i(t) = a_i(\tau_i) t + b_i(\tau_i)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.
5. The method of claim 2, wherein generating a timing model parameter for the I/O device includes generating a timing model parameter for multiple I/O devices.

6. The method of claim 5, wherein the generating the timing model parameter for multiple I/O devices includes using a least trimmed square regressions.
7. The method of claim 2, wherein the generating the timing model parameter for the I/O device with the timestamp is performed by an Interrupt Service Routine of a driver for the I/O device.
8. A method comprising:
  - an I/O device of a system generating a multimedia stream as output, the I/O device having a I/O clock and the system having a system clock; and
  - synchronizing samples of the stream with the system clock.
9. The method of claim 8, wherein the synchronizing includes generating a timestamp of a sample of the multimedia stream with a corresponding time of the system clock; and
  - generating a timing model parameter for the I/O device with the timestamp.
10. The method of claim 9, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $t(\tau_i) = a_i(t) \tau_i + b_i(t)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.

11. The method of claim 9, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $\tau_i(t) = a_i(\tau_i) t + b_i(\tau_i)$ , t is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time t with a i-th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the i-th device.

12. The method of claim 9, wherein generating a timing model parameter for the I/O device includes generating a timing model parameter for multiple I/O devices.

13. The method of claim 12, wherein the generating the timing model parameter for multiple I/O devices includes using a least trimmed square regressions.

14. The method of claim 9, wherein the generating the timing model parameter for the I/O device with the timestamp is performed by an Interrupt Service Routine of a driver for the I/O device.

15. A machine-readable medium having stored thereon a set of instructions which when executed cause a system to perform a method comprising of:

an I/O device of a system receiving a multimedia stream as input, the I/O device having a I/O clock and the system having a system clock; and  
synchronizing samples of the stream with the system clock.

16. The machine-readable medium of claim 15, wherein the synchronizing includes generating a timestamp of a sample of the multimedia stream with a corresponding time of the system clock; and

generating a timing model parameter for the I/O device with the timestamp.

17. The machine-readable medium of claim 16, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $t(\tau_i) = a_i(t) \tau_i + b_i(t)$ , t is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time t with a i-th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the i-th device.

18. The machine-readable medium of claim 16, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $\tau_i(t) = a_i(\tau_i) t + b_i(\tau_i)$ , t is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time t with a i-th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the i-th device.

19. A machine-readable medium having stored thereon a set of instructions which when executed cause a system to perform a method comprising of:

an I/O device of a system generating a multimedia stream as output, the I/O device having a I/O clock and the system having a system clock; and  
synchronizing samples of the stream with the system clock.

20. The machine-readable medium of claim 19, wherein the synchronizing includes generating a timestamp of a sample of the multimedia stream with a corresponding time of the system clock; and  
generating a timing model parameter for the I/O device with the timestamp.

21. The machine-readable medium of claim 20, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $t(\tau_i) = a_i(t) \tau_i + b_i(t)$ , t is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time t with a i-th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the i-th device.

22. The machine-readable medium of claim 20, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $\tau_i(t) = a_i(\tau_i) t + b_i(\tau_i)$ , t is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time t with a i-th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the i-th device.

23. A system comprising:

- a processor;
- a wireless network interface coupled to the processor; and
- a machine readable medium having stored thereon a set of instructions which when executed cause the system to perform a method comprising of:
  - an I/O device of a system receiving a multimedia stream as input, the I/O device having a I/O clock and the system having a system clock; and
  - synchronizing samples of the stream with the system clock.

24. The system of claim 23, wherein the synchronizing includes generating a timestamp of a sample of the multimedia stream with a corresponding time of the system clock; and

- generating a timing model parameter for the I/O device with the timestamp.

25. The system of claim 23, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $t(\tau_i) = a_i(t) \tau_i + b_i(t)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.

26. The system of claim 23, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $\tau_i(t) = a_i(\tau_i) t + b_i(\tau_i)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.

27. A system comprising:

- a processor;
- a wireless network interface coupled to the processor; and
- a machine readable medium having stored thereon a set of instructions which when executed cause the system to perform a method comprising of:
  - an I/O device of a system generating a multimedia stream as output, the I/O device having a I/O clock and the system having a system clock; and
  - synchronizing samples of the stream with the system clock.

28. The system of claim 27, wherein the synchronizing includes generating a timestamp of a sample of the multimedia stream with a corresponding time of the system clock; and

generating a timing model parameter for the I/O device with the timestamp.

29. The system of claim 28, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $t(\tau_i) = a_i(t) \tau_i + b_i(t)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.

30. The system of claim 28, wherein the generating the timing model parameter includes generating the timing model parameter using a linear transition model that includes  $\tau_i(t) = a_i(\tau_i) t + b_i(\tau_i)$ ,  $t$  is a value of the system clock and  $\tau_i$  is a sample number of the multimedia stream at time  $t$  with a  $i$ -th device, and  $a_i(t)$  and  $b_i(t)$  are timing model parameters for the  $i$ -th device.